

REMARKS/ARGUMENTS

Claims 2 – 4, 8 and 21 - 23 are pending in the application.

Claim 1 has been replaced by new claim 21, with support for the feature that the target is hollow to be found on page 9 of the specification, line 18. Original claims 2 – 4 and 8 remain unchanged, except for their dependency, and new claims 22 and 23 correspond to original claims 9 and 10. The remaining claims have been canceled.

The Examiner has indicated that the word “form” should be replaced by – for forming -- . However, Applicants respectfully submit that “form” is the word that is intended, and is the correct usage since the recited “means” do in fact form the electron beam, and in particular such that... .

The features defined in Applicant's new claim 21 have a combinative effect. In particular, due to the tapering of the cross-section of the head of the x-ray tube, the head may be inclined with respect to an object that is to be inspected in order to effect an inclined irradiation of the object, as explained starting on page 5 of the specification of the present application. As a consequence, the target may be brought very close to the object that is to be inspected to thereby be able to obtain an image having a high magnification. Furthermore, since the target is embodied as a hollow transmission target, the focus of the x-ray tube may be positioned at the outer most end of the target and hence very close to the object that is to be inspected. In addition, since the target terminates in a vertex, the focus may be placed in the area of the vertex and hence very close to the object that is to be expected. Placing the focus on the area of the vertex has the distinct advantage that during inspection of an object, the focus may be placed in a cavitation of a highly

structured object, such as a printed circuit board. Thus, the present invention provides a substantial improvement in the inspection of printed circuit boards or similar structured objects that are to be inspected.

CLAIM REJECTIONS – 35 USC § 102 & 103

The Examiner has rejected, among others, claim 1 as being anticipated by Wilkins, and as being obvious over Bensussan in view of Peugeot.

Applicant respectfully submits that Wilkins cannot anticipate Applicant's new claim 21 because this reference does not teach every element of the claim, as required by MPEP section 2131. In particular, Wilkins fails to disclose a hollow transmission target. Rather, in the x-ray tube disclosed in Wilkins, a massive so-called direct irradiation target is used. As stated in paragraph [0031] of Wilkins, the target is a solid needle or finger. Thus, it is respectfully submitted that Wilkins not only cannot anticipate Applicant's x-ray tube as defined in new claim 21, it could not suggest such an x-ray tube since the solid needle or finger target thereof teaches away from Applicant's hollow transmission target (see the last section of MPEP section 2141.02).

With regard to Bensussan, this reference fails to teach or suggest a microfocus x-ray tube having a focus with a diameter of $\leq 200 \mu\text{m}$. Nor does Bensussan teach or suggest an x-ray tube in which the target terminates in a vertex. As a matter of fact, in contrast to this requirement of Applicant's new claim 21, in the Bensussan device a frustoconical target is used. Furthermore, Bensussan does not suggest to one of ordinary skill in the art how to embody its x-ray tube as the microfocus x-ray tube of the present application. In addition, there is no suggestion or motivation for replacing the frustoconical target of Bensussan with a target

terminating in a vertex. Thus, pursuant to MPEP section 2143.01, no prima facie case of obviousness has been established. It should furthermore be noted that even the cited combination of references would not suggest Applicant's new claim 21 since neither reference teaches the use of a target terminating in a vertex.

In view of the foregoing discussion, Applicant respectfully requests reconsideration of the allowability of the claims now pending in the present application. In addition, should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone call in order to discuss any outstanding issues and to expedite placement of the application into condition for allowance.

Respectfully submitted,



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